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Ranger

Operation Ranger – Nevada			
Codename	Date	Delivery	Yield (kt)
Able	01/27/1951	Airdrop	1
Baker	01/28/1951	Airdrop	8
Easy	02/01/1951	Airdrop	1
Baker-2	02/02/1951	Airdrop	8
Fox	02/06/1951	Airdrop	22

On January 11, 1951, the Atomic Energy Commission announced that the President of the United States had authorized the Commission to use part of Las Vegas Bombing and Gunnery Range for “experiments necessary to the atomic weapons development program.”¹ Sixteen days later, on January 21st, the first test, codenamed Able, exploded at 0545 hours Pacific Standard Time 1,060 feet over the dry lake bed of Frenchman Flat with a yield of one kiloton. In quick succession, four more devices were dropped over Frenchman Flat with yields ranging from one to twenty-two kilotons.²

Operation Ranger came at a precipitous time in American nuclear history. Stockpiled weapons, despite the success of Sandstone, used copious amounts of fissile material that kept production numbers low. The remote location of Enewetak Atoll, the nation’s only test site, was a logistical nightmare, each test requiring a task force of hundreds of ships and thousands of

¹ United States Atomic Energy Commission Santa Fe Operations Office, Press Release, SFPR-391, January 11, 1951.

² Defense Nuclear Agency, Operation Ranger: Shots Able, Baker, Baker-2, Fox; 25 January – 6 February 1954; 82; and Terrance Fehner and F. G. Gosling, *Origins of the Nevada Test Site* (Washington, D.C.: United States Department of Energy, 2002.), 70-71.

personnel working over the better part of a year to carry out operations. In addition, the atoll's wind patterns limited testing to six months out of every year. Moreover, providing security during heightened tensions with the Soviet Union was a growing concern. Most problematic of all, "possible design flaws" in the devices scheduled for the upcoming Greenhouse test series needed to be resolved quickly.³ The Ranger tests, carried out in haste at the newly acquired continental test facility addressed all of these issues.

Shortly after Sandstone, the DoD's Armed Forces Special Weapons Project conducted Project Nutmeg, a study aimed at identifying possible continental test sites. Project staff identified five sites: the North Carolina Coast, the Gulf Coast of Texas, the Dugway Proving Ground-Wendover Bombing Range in Utah, the Alamogordo-White Sands Guided Missile range (Trinity Site), and the Las Vegas Bombing and Gunnery Range. The AEC was not enthusiastic. While recognizing that a continental test site offered "greater flexibility" and potentially lower logistical costs, the AEC believed that "Under conditions today, continental operations will obviously pose difficult domestic and possibly international relations problems; however, the magnitude of these problems could in time change, as in the event of a national emergency."⁴

That national emergency came on June 25, 1950, when North Korea initiated hostilities on the Korean peninsula. Facing a logistical nightmare of fighting a war in Asia, the Joint Chiefs of Staff seriously considered cancelling Greenhouse. Using the Nutmeg study as a guide, two sites in Nevada – designated "North" (Tonopah) and "South" (Frenchman Dry Lake) – were selected for review. When asked to comment, Norris Bradbury recommended the "South" site,

³ Terrance Fehner and F. G. Gosling, *Origins of the Nevada Test Site* (Washington, D.C.: United States Department of Energy, 2002.), 49.

⁴ Ibid.; and David Lilienthal to the Chairman of the Military Liaison Committee, September 20, 1948.

believing that detonations as large as 50 kilotons could be safely carried out without causing damage to nearby Las Vegas. The AEC agreed, recommending the site to the National Security Council, who sent their approval on to President Truman. The President signed off on December 18th.⁵ Although Truman's approval provided a geographic area for Ranger, there were no onsite facilities, including shot towers. Each test device had to be flown directly to the site from Albuquerque on an Air Force B-50 bomber and dropped on a hastily constructed ground zero site marked by a "red Light." Only a very few structures for diagnostic equipment were built.⁶

On January 28th, just one day after Able, the Baker device exploded 1,080 feet over Frenchman Dry Lake. Of a slightly different design than its predecessor, Baker gave a yield of eight kilotons. The third Ranger test, codenamed Easy, also detonated 1,080 feet over the dry lakebed. Easy, a repeat of the Able test, yielded one kiloton. The fourth test, Baker II, a repeat of the first Baker test, exploded on February 2nd with a yield of eight kilotons. The fifth and final test, codenamed Fox, was a design very different from its predecessors, exploding 1,435 feet over Frenchman with a yield of twenty-two kilotons. All five tests provided data critical to resolving the Greenhouse design issues. The Ranger tests also confirmed the utility of having a permanent proving ground in Nevada.

⁵ Fehner and Gosling, 44-48.

⁶ Ibid, 64-65. The B-50 was an advanced version of the wartime B-29.